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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,527	10/31/2003	Chia-Lin Hsu	46602-31257	4230
35161	7390	06/04/2004	EXAMINER	
DICKINSON WRIGHT PLLC 1901 L STREET NW SUITE 800 WASHINGTON, DC 20036			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/699,527

Applicant(s)

HSU ET AL.

Examiner

Sylvia R MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-3, 8, 14, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashi et al (USP 6,379,230).

Hayashi teaches a CMP apparatus that comprises a polishing table 62, a rotatable wafer holding head (carrier). Hayashi also teaches a wafer transfer system (means for transferring) 61 which transports a semiconductor wafer into each station including, a loading station S1, primary polishing station S2, a secondary polishing station S3, and an unloading station S4.

The primary and secondary polishing stations are different in that the primary station planarizes the surface of the wafer, which is transferred onto the index table 1, while the secondary polishing station S3 is a region for use in carrying out a final process to the planarized wafer. The abrasive fluids used in these polishing stations are also different from one another, see col. 7 lines 49-53. The change of polishing parameters and and/or change of polishing pad anticipates the "different type" claim limitation.

Regarding claim 2, the supply section 66 of Hayashi features a liquid solution dispenser.

The prior art by Hayashi features the orbital type polishing.

Regarding claim 3, the transferring means comprises a plurality of carrier heads (holders  
2).

Regarding the arbitrary sequencing limitation, the cluster tool of Hayashi is inherently capable of operating the robot art to transfer the wafers from station to station.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-7, 9-13, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Labunsky et al (USP 6,132, 289).

The teachings of Hayashi were discussed above.

Regarding claims 4 and 9, Hayashi fails to teach a rotary CMP polisher.

Regarding claims 7 and 11-13, Hayashi also fails to teach a polishing module comprising a cleaner for the substrate.

Labunsky teaches a linear (rotary) CMP polisher 10 which moves linearly with respect to the surface of the wafer 11. Figure 2 shows a cluster tool 30, which incorporates a plurality of linear polishers, an input/output module 31. A dry robot module 32 loads the wafer from the I/O module to the pre-aligner module 34. Wet robot module 36 is a wet queue module 38 and on the opposite side is a scrubber (polishing)/cleaner module 39. Module 41 is a load, unload, and clean module. Modules 42 and 43 comprise polishers. Four polishing heads 48 are in a circular pattern along the outer ring portion of the dial plate 47. The heads include fluid lines (liquid solution dispensers).

Regarding claim 5, control module 70 of Labunsky contains the necessary control elements.

The motivation to provide the apparatus of Hayashi with a rotary CMP polisher is that the rotary polisher provides a means of polishing to obtain a more effective polishing rate as discussed in col.1 lines 50-65 of Labunsky.

The motivation to provide the apparatus of Hayashi with a cleaner is that the cleaner ensures that the abrasives from the slurry are eliminated from the wafer to promote a better product.


Thus, it would have been obvious for one of ordinary skill in art of the claimed invention to provide the apparatus of Hayashi with a rotary CMP polisher and cleaner in a polishing module.

#### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Sylvia R. MacArthur  
Patent Examiner  
Art Unit 1763

June 1, 2004